panied by the usual written labels except at letter rates of postage, but expressing a willingness to bring the matter to the attention of the law makers at the proper time. The report was discussed, and upon motion the committee was continued. Prof. Barnes moved that the officers of the club draft resolutions to be presented for the approval of the Biological Section of the Association to still further promote the object in view.

The Club then proceeded to the election by ballot of officers for the ensuing year. The first ballot gave for president, Bessey 10, Beal 6, Hyatt 1; for secretary, Arthur 11, Barnes 2, Miss Knight 1, Dudley 1. The president announced that Prof. Bessey had been elected president and Prof. Arthur secretary.

A paper by Dr. Geo. Vasey on "A Hybrid Grass," in the author's absence, was read by the secretary, and is printed in full on another page. In the remarks that followed Prof. Scribner said Muhlenberg, Sprengel and Michaux placed *Eatonia* in *Aira*, which this discovery of Dr. Vasey showed to be not far wrong. *Graphephorum melicoides* and *G. Wolfii* might also be placed in the group *Avenaceæ*. The genus *Graphephorum* is an anomalous one, and the species should doubtless be distributed.

The Club then adjourned. The following papers were on the programme of the Club, but were not heard for want of time: "Notes on a Peculiar Flora on the Kittatinny Mountains," by Dr. N. L. Britton; "A New Preservation Fluid Especially Valuable for Plant Tissues," by Prof. C. V. Riley; Note on the Germination of Grasses," and "A Point in the Structure of the Sterile Flowers of Silphium," by Prof. C. E. Bessey; "The Fertilization of Wheat," by Prof. W. R. Lazenby.

Excursions and Entertainment of the Botanists at Philadelphia.

The prediction that the meeting of the American Association this year would bring together a large and notable attendance of botanists was fully realized. Indeed, they began to arrive as early as Saturday preceding the opening of the Association. The total attendance reached a little above one hundred, of whom six were from Great Britain. Full half the number have more than a local reputation, including a majority of our most distinguished teachers and investigators.

The arrangements for the benefit of the botanists were as elaborate and complete as could have been wished. The efforts

of the committee of arrangements appointed by the Botanical Club were heartily seconded by the botanical section of the Academy of Sciences, who arranged the financial matters, a no small item, and both before and during the meeting were constantly at hand to render assistance. But to one person, Mr. J. H. Redfield, more than to any other individual, we owe the thorough success of the arrangements. Before the meeting he left no avenue untried that promised to afford additional enjoyment for the occasion, and during the meeting gave the same assiduous attention to the consummation of every detail. The heat was one feature of the occasion which produced so much discomfort that it can not be passed by in silence. It was intense and constant, both day and night, causing many to leave before the close of the session, and greatly enervating those who remained.

The Academy of Sciences was the headquarters of the botanists, where they met a hearty welcome, and found the library, collections, and other facilities of the institution placed at their service. It proved somewhat too far for convenience from the rooms of the Association, and the heat made the distance seem doubly long.

The excursion of Saturday to the pine barrens was, barring the heat, thoroughly enjoyable. The crossing of the ferry, the bustle of starting, and the ride gave opportunities for much fragmentary intercourse. When the coach which was devoted to the botanists was left on the side track at Egg Harbor the view that greeted the eye was a level sandy plain with low vegetation, interspersed with shrubs and trees here and there, and a few houses in the foreground. It was determined to make a sally eastward first. In spite of the fact that the thermometer had undoubtedly passed above the nineties, the whole party of 50, including ladies and Britishers, wandered out for a mile or so amid a vegetation remarkably rich in showy and interesting flowers and botanical rarities. But the heat would not permit much loitering, and they soon returned with red faces, but arms full of treasures. After a short rest all but a few summoned up fortitude to start out again, going westward for a full mile along the railroad track. This gave a different flora. But the zeal of the excursionists, which was emulating the temperature, reached its highest point when the cry ran all along the line that the Schizæa was found. There was a succession of disappearing forms down the railroad embankment into the thicket, where all, great and small, went down on hands and knees to gather the

precious little ferns of such unfern-like aspect. But it is impossible to tell all that happened, and we must pass by numerous interesting incidents. A bounteous lunch was served upon the return, after which Mr. Martindale called the botanists to order, Prof. Beal presided, and remarks were make by several members of the party. Dr Gray gave some reminiscences of his early visits to this region He thought it was in 1832 that in company with Dr. Torrey he first saw the pine barrens at Tom's River, and had found *Schizæa* The following year he spent a week at Quaker's Bridge, and had not been in the pine barrens since till the present occasion. Mr. Carruthers spoke pleasantly of the enjoyment which the day had afforded him, and his surprise to see a region so apparently barren supporting such a varied vegetation, particularly at this season of the year. He was only able to recognize Pteris and Osmunda regalis as plants he had previously seen in a living state. Prof. Crawford, of Scotland, Prof. Porter, of Pennsylvania, and others spoke, when, the train arriving, we were on our way again, visiting the seashore for a breath of salt air, and then back to Philadelphia. It was a thoroughly successful excursion in many respects. In the matter of collecting, flowering plants were abundant and interesting, but we did not learn how many were secured, lichens were numerous, 83 species being gathered, fungi less abundant, 14 species being gathered, but water and moisture-loving plants largely absent. It was a surprise to most to see the vivacity of the older botanists. Dr. Gray was everywhere, and more active and less affected by the heat and the tramping than many of the young men, and Mr. Carruthers's genial face was also constantly with us.

On Monday morning those of the botanists who expressed a desire to visit the famous "ballast grounds" at Camden were met at the Market street ferry by Dr. J. B. Brinton, who was provided with a liberal supply of ferry tickets, and insisted upon distributing them to all who wished to go over. Arriving at the other side, we were met by Mr. Isaac C. Martindale, who ushered us into a four-horse coach. After the arrival of the last boat load, we were whirled off to the American Dredging Company's wharf, where we had our first opportunity to collect the many foreign plants which have established themselves on the ballast grounds. Starr's wharf and the Narrow Guage R. R. wharf yielded still other species. Among those picked up by the party were *Cnicus acanthoides*, *Verbena officinalis* (a new invoice, just over), *Convolvulus arvensis*, *Atriplex rosea*, *Reseda*

lutea, Diplotaxis tenuifolia, Linaria spuria, Lycopus Europœa (typical), *Atriplex hastata, Chenopodium vulvaria, Amarantus blitum, Coreopsis bidentoides, Lotus corniculatus,* etc. Some of these named are well established in other parts of the country, but it was interesting to see the exact way in which they were, many of them, introduced. By the time the party had skirmished over the three localities, the sun began to grow hot—a gentle reminder of the pine-barren experience—and our host gave the order for the return. In a few minutes we were landed at the door of his hospitable home on Penn street, where Mrs. Martindale, with several other ladies, were waiting to receive us. After looking over the many rare and valuable books—some of them almost priceless—which Mr. Martindale has gathered into his library, the company were glad to heed an invitation to the dining room, where an elegant lunch was spread, such as never before had tickled the palates of "wharf rats," such as we that morning. After lunch, Mr. M. displayed some of the treasures of his herbarium and explained the plan adopted in its arrangement—a plan which provides for unlimited growth without the necessity of complete overhauling at each considerable addition. His herbarium is one of the largest (if not the largest) private herbaria in the country, and certainly no method of arrangement could surpass his for facility of reference and ease of handling.

After spending a most delightful hour or two, the party were driven to the ferry and returned to the work of section F in the afternoon. Those who participated in the excursion to the ballast grounds will undoubtedly all say that no excursion of the meeting was more enjoyable or enjoyed than this

It is said that the social privileges are highly important features of these gatherings, and, granting this, we are ready to maintain that the reception of Monday evening, given by the Botanical Section of the Academy of Sciences at their rooms, stands among the first of the notable events of the session. As many as 300 sat down to listen to the brief formal exercises of the evening. After the adjournment of an extremely short regular meeting of the Botanical Section of the Academy, Dr. Gray was called to the chair, Mr. Martindale acted as Secretary, and addresses were given by Messrs. Vasey, Canby, Meehan, Macloskie, Rothrock, Bessey, John Ball, Carruthers and Redfield. These were brief and pithy, and interspersed with such felicitous and suitable remarks by the presiding officer as to make the occasion a memorable one. The chatting and feasting that followed is not to be described, but resulted in all the satisfaction such an occasion may bestow.

On Tuesday afternoon the botanists of the Association joined the members of the Botanical Section of the Academy of Natural Sciences in a visit to the first Botanical Garden in the United States, established by one of the earliest botanists of this country, John Bartram, on the bank of the Schuylkill about three miles below Philadelphia. When the train stopped at the 58th Street Station, about 80 red badges disembarked, and under the guidance of several members of the Academy, set out for the historic spot. Changes of road since the last visit somewhat misled the guides and the party, and when the road suddenly ended blindly at a seven-rail fence, there was nothing for it but a climb. The ladies, however, took the fence in a style that indicated that they had had some previous experience on sundry collecting trips. A short cut across pastures and barn-lots soon brought us to the desired haven, though not by the most delightful traveling withal.

Coming from the railroad, one approaches the house from the rear as it faces the Schuylkill. The party first halted before a stone in the gable bearing the inscription, in quaint letters,

ΘΕΟΣ ΕΩΖΩ.
JOHN ANN: BARTRAM: 1731.

A larger one on the front of the house, over the window of his study, recites the simple creed for which he was disciplined by the Society of Friends:

'TIS GOD ALONE, ALMYTY LORD,
THE HOLY ONE BY ME ADORD.
JOHN BARTRAM—1770.

This house is built of stone, a gneissoid granite apparently quarried, hewn and laid by Bartram's own hand. In the center is a large recess porch, the roof of which is supported by columns with carved capitals of the Elizabethan order. The stone casings and sills of the windows are also carved in odd designs, and with evident patience. These ornamentations together with the whole make up of the building show that Bartram was a mason of no mean attainments.

The great interest of the garden to botanists lies as much in the wonderful array of plants from all parts of the U. S. almost, which this indefatigable collector got to growing here. Clambering over the corner of the house is the famous Christ's thorn, whose horrid spines bring to mind the bleeding brows of the Savior. The great Cypress planted in 1749 is said to be 130 feet high. Three feet above the ground it meaaures 21 ft. 5 in. in circumference, and near the base fully 30 feet. Some descendants of Bartram's oak, *Quercus heterophylla*, Michx., are grow-

ing in the garden, the original tree which stood outside having been cut down many years ago by mistake. After inspecting the house and the cypress, the party scattered, roaming through the grounds at pleasure, noting the great variety of trees and shrubs which Bartram had collected in his travels from Ontario to Florida.[1]

The return to the station was along a better road than the first one traversed, and toward train time the party gathered on the steps of the station to chat over the delightful pilgrimage, soon completed by the homeward ride.

A Hybrid Grass.[2]

BY DR. GEO. VASEY.

In a low meadow on the banks of Hunting creek, near where it empties into the Potomac river, a mile below Alexandria, Va., I found, the present season, *Trisetum palustre*, L. and *Eatonia Pennsylvanica*, Gr. I was surprised, and puzzled also by finding growing with these grasses another, which was evidently intermediate between them. The field covered several acres, and there was an abundacne of specimens of all kinds, although the *Trisetum* was mostly out of flower, and, to a considerable extent, had dropped its seed. A careful survey of the circumstances led me to the conclusion that the intermediate form was a true and spontaneous hybrid between the *Trisetum* and *Eatonia*. At first thought this would seem to be improbable, if not impossible, as the two grasses belong to different genera, which in some of the classifications are rather widely separated. A careful examination, however, led me to the conclusion that these genera are closely related, and that the intermediate specimens were truly hybrids between the two species named. The close relationship between *Kœleria* and *Eatonia* is very evident, the two species of the latter genus having been included in *Kœleria* previous to the construction of the genus *Eatonia* by Rafinesque. Both species had, however, been placed in *Aira* by Muhlenberg. Moreover, Dr. Hooker, in the Handbook of the New Zealand Flora, places both *Kœleria* and *Trisetum* in the section *Avenaceæ*, and the

[1] An account of Bartram's life, travels, and garden may be found in Harper's Magazine for February, 1880.

[2] Paper read before the Botanical Club of the A. A. A. S., Philadelphia, 1884.